# PATENT APPLICATION

## Method and Apparatus for Classifying Document Information

Inventors: **Hideko Kagimasa**
Residence: Yokohama, Japan
Citizenship: Japan

**Toru Takahashi**
Residence: Kamakura, Japan
Citizenship: Japan

**Yoshifumi Yamashita**
Residence: Yokohama, Japan
Citizenship: Japan


Assignee: **Hitachi, Ltd.**
6, Kanda Surugadai 4-chome
Chiyoda-ku, Tokyo, Japan
Incorporation: Japan


Entity: Large

- 1 -

# METHOD AND APPARATUS FOR CLASSIFYING
# DOCUMENT INFORMATION

BACKGROUND OF THE INVENTION

The present invention relates generally to electronic document information management architectures and, more particularly, to a method and
5 apparatus for management and classification of document information thereby enabling authorized users to share document information via computer communication networks.

In recent years, wide spread and
10 popularization of computer networks result in any individuals being enabled to directly open or "publish" information to anybody.  One example is that a person such as a computer operator or user is enabled to issue information to people anywhere over the world via
15 online computer network services such as electronic news, electronic mails (e-mails) and/or advanced computer system called the World-Wide Web (WWW), which links documents and pictures into a database that is stored in computers in many different parts of the
20 world.  Through the individual's information publication attempts based on his or her own free will, s/he has no specific difficulties in appealing self-characteristics and results of labor efforts.  In addition, sharing such published individual's effort
25 results and information as well as know-how and

knowledge must lead to improvements in intellectual productivity in an organization as a whole.

Such computer networks function as the infrastructure for information sharing. Recent rapid growth in computer network technologies pushes the information-sharing infrastructure to grow to offer enhanced performance and serviceabilies. Unfortunately, such infrastructure growth per se is merely to provide the necessary condition for common sharing or "commonization" of information. Completion of the infrastructure does not automatically guarantee any intended facilitation of the information sharing with increased accessibility and usability.

An advantage as to improvements in intellectual productivity of the entirety of a group is expectable by mutual publication and common sharing, among individual associates or members who belong to the group, of information and knowledge plus know-hows or else which are stored and handled in a way independently of the group members for purposes of improvement in person-based intellectual productivity. Such information sharing over computer networks is typically achievable by use of online electronic bulletin boards and/or web pages on the Internet. Additionally, based on records of access results to presently published information, it is possible for an information publisher to roughly be aware of web-site visitors' reactions to the published information being

accessed for referencing purposes.

Conventional known information sharing systems are faced with a problem that any contents are not registered positively. One major reason of this is that troublesome and time-consuming operations are required in document registration events. Another reason lies in the presence of complexities in procedure for selection of an appropriate destination of document file registration. A presently available approach to solving this problem is to employ a technique for enabling establishment of a multi-level hierarchical configuration of folders making up a folder hierarchy to thereby provide computer users with adequate services in a way pursuant to the users' automatic folder classification processing requests, which technique is disclosed in JP-A-2000-89991. A file/folder selection facilitation technique is disclosed in JP-A-9-311805. This technique is for facilitating computer users to select an appropriate file suitable for storage of a new document and also a folder suitable for searching of certain documents that satisfy any desired search conditions.

SUMMARY OF THE INVENTION

The conventional information sharing systems offer a capability to provide information registration environments with reduced complexities and increased usabilities. Unfortunately these traditional systems

fail to provide any successful approach to giving any positive incentive to information providers in accordance with information being provided.  Due to this, the systems suffer from a problem as to the

5 incapability to establish positive motivation toward information sharing.

It is therefore an object of the present invention to provide a new and improved electronic document information management technique capable of

10 avoiding the problems in the prior art.

It is another object of this invention to provide a document information management method and apparatus for permitting users to obtain and grasp know-hows of beneficial related information through

15 publication and registration of electronic documents to thereby activate information sharing and/or knowledge sharing more effectively.

To attain the foregoing objects the invention provides a document information management method and

20 apparatus as designed to notify a document registrant of related or relevant information of presently available content-similar documents in a document registration event.  Use of the document information management scheme unique to the invention enables users

25 to effortlessly grasp relevant information useful to themselves through publication of information.  This makes it possible to establish motivation of positive participation in information-sharing/knowledge-sharing.

the

- 5 -

In this way, it is possible to achieve an advanced scheme, beyond realization of mere information sharing, for giving an information provider positive incentive in accordance with information being provided, which in turn makes it possible to facilitate and activate information sharing.

These and other objects, features and advantages of the invention will be apparent from the following more particular description of preferred embodiments of the invention, as illustrated in the accompanying drawings.

BRIEF DESCRIPTION OF THE DRAWINGS

Fig. 1 is a block diagram showing an overall configuration of an electronic document management system in accordance with a first embodiment of the present invention.

Fig. 2 is a diagram showing a pictorial representation of the processing in the document management system in accordance with the first embodiment of this invention.

Fig. 3 is a diagram showing one typical example of a display view for new document registration in the document management system of the first embodiment of the invention.

Fig. 4 is a diagram showing an example of users' organization information in the document management system of the first embodiment of the

invention.

Fig. 5 is a diagram showing one exemplary organization configuration in the document management system of the first embodiment of the invention.

5      Fig. 6 is a diagram showing an example of a document registration result view in the document management system of the first embodiment of the invention.

Fig. 7 is a flowchart showing a procedure of

10   document registration processing in the document management system of the first embodiment of the invention.

Fig. 8 is a diagram showing an example of a folder structure in a document management system in

15   accordance with a second embodiment of the instant invention.

Fig. 9 is a diagram showing an example of a document registration result view in the document management system of the second embodiment of the

20   invention.

Fig. 10 is a flowchart showing a procedure of document registration processing in the document management system of the second embodiment of the invention.

25      Fig. 11 is a diagram showing an example of a document list-up display within a registration destination folder in the document management system of the second ·embodiment of the invention.

Fig. 12 is a diagram showing an example of a document list display within another folder in the document management system of the second embodiment of the invention.

5      Fig. 13 is a diagram showing an example of a folder structure in a case a document is registered while being associated with a plurality of folders in a document management system in accordance with a third embodiment of the invention.

10      Fig. 14 is a diagram showing an example of a folder structure in a case a document is registered with associativity to a plurality of folders in the document management system of the third embodiment of the invention.

15   DETAILED DESCRIPTION OF THE EMBODIMENTS
First Embodiment

A first embodiment of the present invention will now be set forth with reference to some of the accompanying drawings below.

20      Fig. 1 is a block diagram showing a configuration of an electronic document management system in accordance with an embodiment of the present invention. The document management system shown herein is such that a document management server 10 and a

25   "client" personal computer (PC) 20 are operatively connected together via a network 30 such as a local area network (LAN), Internet, public online

communication links or the like.  The document

management server 10 is generally constituted from a

document database 40 and a collection of software

programs for control of this database, including a

5  document registration program 110, a registration

management information referencing program 120, a

similar document search program 130, and a document

displaying program 140.

In the illustrative embodiment, the client PC

10  20 is arranged to include a document registration/

display program 210, a display device 50 and an input

device 60.  The document registration/display program

210 is utilizable by Web browsers and is for operative

association with respective programs within the

15  document management server.

The document database 40 is configured from a

document storage unit 410 and a search-use data storage

unit 420 plus a registration management information

storage unit 430.  The document storage unit 410 is

20  operable to store therein document data; the search

data storage unit 420 stores therein search indexes and

search structure indexes; and, the registration

management information storage unit 430 stores

definition information of properties of an object to be

25  searched.

The above is the configuration of the

document management system embodying the invention.

The document management system of this

embodiment is arranged to search for more than one similar document while adding designation of a search object structure to search conditions, thereby acquiring related or relevant information of a document

5   being registered.  This is realizable by use of a similar document search technique for searching structured documents with increased similarity to a species or "seed" document, as has been disclosed in JP-A-2001-14326.

10      With the document management system of this embodiment, there is realized a method for permitting computer users to register documents to the document database 40 through the document registration/display program 210.  More specifically a user is expected to

15  get the document registration/display program 210 started at the client PC 20 and then designate a file of a document to be registered by use of the input device 60 and also input property values.

        The document registration program 110

20  registers to the document storage unit 410 of the document database 40 more than one registration document file as has been input from the client PC 20 through the document registration/display program 210 along with the properties thereof.

25      In addition, the document registration program 110 creates search-use data based on the registration document file and its properties and then stores them in the search data storage unit 420 of the

document database 40.

Further, the document registration program 110 sets up a species or "seed" document for a similar document search based on the registration document file and its properties.

The registration management information referencing program 120 reads definition information of the properties of a to-be-searched object out of the registration management information storage unit 430 of the document database 40 and then passes it to the document registration program 110.

The similar document search program 130 uses the seed document that was set by the document registration program 110 as a search condition and then conducts a search with respect to the data accumulated in the document database 40. The document display program 140 prepares related information of the registered document on the basis of a search result(s) of the similar document search program 130 and then passes it to the document registration/display program 210. The document registration/display program 210 visually displays the relevant information of such registered document on the display 50.

A detailed explanation will next be given of an overview of the processing to be executed by the document management system in the illustrative embodiment. See Fig. 2, which is a diagram showing an outline of the processing of the document management

system in accordance with the first embodiment.

As shown in Fig. 2, when a user "m" first
designates a file of a to-be-registered document "M"
from the document registration/display program 210 and
5 then inputs one or more property values, the document
registration program 110 is called for execution of
registration processing required. Here, one example of
a new document registration view as displayed under
control of the document registration/display program
10 210 is shown in Fig. 3. This new document registration
view comes with several items, including a document
file 3000 and document properties 3010. Designation of
the document file 3000 may be done by either direct
input of a file name such as "m.doc" or alternatively
15 by selection of an appropriate one from among a list of
"candidates" of document names being displayed after
clicking on a reference button icon. The document
properties 3010 are to be input in such a way that a
document name is "DB Proposal" with a client name
20 specified as "M bank". Lastly, upon clicking a
registration button, the registration processing is
executed.

The document registration program 110 in
Fig. 2 forms a search index M on the basis of the
25 content of a file of a document M to be registered and
then stores it in the search data storage unit 420.
Next, the document registration program 110 calls the
registration management information referencing program

120 and then reads from the registration management

information storage unit 430 definition information of

the properties of an object to be searched.  The search

object property definition information defines more

5  than one property for use as an object upon searching

for related information of bibliography and relevant

information of an organization.  In the example of

Fig. 2, definition is made in such a way which follows:

in the case of bibliography, property values of

10  "Industry Type" and "Client Name" plus "Document Name"

are regarded as the objects of interest; in the case of

organization the property value of "Belong To" is

regarded as the object.  The document registration

program 110 is operatively responsive to receipt of the

15  definition information of the above-noted search

object(s) for producing more than one search structure

index on the basis of the values of the registration

document M's properties "Industry Type", "Client Name",

"Document Name" and "Belong To", which will then be

20  stored in the search data storage unit 420.

Next, the document registration program 110

sets up a species or "seed" document for a similar

document search based on the registration document M's

file and properties.  Firstly, set in the seed document

25  a content of the file of registration document M; then,

let it be a search condition 1.  Next, set in the seed

document a value "Finance" of the property "Industry

Type" of the registration document M, a value "M Bank"

of the property "Client Name" and a value "DB Proposal"

of the property "Document Name"; then, let them be a

search condition 2.  Next, refer to organization

information to which the registered user $m$ belongs to

5    thereby set "Finance 1G, ePJ" in the seed document;

then, let it be a search condition 3.  Here, an example

of the user's organization information is shown in

Fig. 4.  The organization information consists

essentially of a user ID, organization and mail

10   address.  For instance, in case the user ID is "a", it

indicates that the user belongs to the organization

"Finance 3G" and that his or her mail address is

"user_a.xxx.co.jp".  Alternatively in the case of a

user ID "m" as exemplarily shown in Fig. 2, the

15   organization becomes "Finance 1G, ePJ".  This indicates

that the user $m$ belongs to two organizations of a group

"Finance 1G" and a project "ePJ" as better shown in an

organization constitution diagram of Fig. 5.

Next the document registration program 110

20   calls the similar document search program 130 for

execution of similar document search processing.  As a

result of such similar document searching, a document

ID and similarity of more than one similar document are

obtained.

25       The similar document search program 130 first

conducts a search for any available similar document(s)

with respect to the search condition 1 to thereby

obtain a result, which is regarded as a search result

1. Next, with regard to the search condition 2,
designate "Industry Type", "Client Name" and "Document
Name" as search object structures and then searches
similar documents. Let this result be a search result

5 2. Further, regarding the search condition 3,
designate "Belong To" as a search object structure;
then, search similar documents. Let this result be a
search result 3.

The document display program 140 performs

10 sorting in the order of higher similarities on the
basis of the search results of the similar document
search program 130 and then prepares a list of related
information items with the similarity and document ID
plus document name and the like being as items to be

15 visually displayed.

What has been discussed above is an
explanation of the processing summary of the document
management system in accordance with the first
embodiment.

20 An explanation will next be given of a
summary of a display method of the document
registration/display program 210 in this embodiment.
There is shown in Fig. 6 an example of a document
registration result display view that the document

25 registration/display program 210 visually displays a
result of document registration. Fig. 6 is a view to
be displayed as a result of new document registration
as exemplarily shown in Fig. 3. The document

registration result view displays a document ID as
newly assigned to the presently registered documents
along with related information thereof.  One example is
that in the case of a document "DB Proposal", it is

5   registered with a document ID 89.  On the document
registration result view of Fig. 6, a list of documents
which are similar to the registration document in
content and bibliographic information plus organization
information is displayed as the related information of

10  the registration document.  The related information is
constituted from related information 3100 concerning
the content, related information 3110 as to the
bibliographic information, and related information 3120
about the organization information.

15          In the document registration result view each
related information consists essentially of
prespecified display items including the similarity,
document ID, document name, client name, industry type,
belong-to, and registration date, wherein the documents

20  are displayed in such a manner that these are listed in
the order that a document of higher similarity precedes
the others.  When a computer user clicks the document
name of any given document within the related
information, a corresponding application gets started

25  enabling the user to refer to a document content.
Alternatively when the user clicks the registrant of
any given document within the related information, s/he
can refer to an electronic mail (e-mail) address of the

registrant.

The related information 3100 is a list of certain documents that are similar in content to the registration document. In this example, first, the

5 registration document per se is displayed as a similarity 100 at the top of the list; next, a list of documents is being displayed in such a manner that their similarities are sorted in the order of 95, 87, and 83. In this case, the user "m" who is a document

10 registrant can recognize that a user "a" who is in charge of clients of the same industry type and another user "b" who is expected to handle clients of a different industry type have already registered proposal documents which are much similar in content

15 while also being permitted to perform communications with them whenever the need arises. Whereby, they are enabled to share know-hows such as common technical information, problems to be solved, client needs and others, without regard to differences in industry type.

20 The related information 3110 is for indication of an up-to-date registration situation of some documents similar in bibliographic information. Displayed as the bibliographic information is the similarity with document name and client name plus

25 industry type being as the objects of interest. In this example, first, the registration document per se is displayed with a similarity 100 at the top of the list; next, a document list is being displayed in such

a manner that similarities are in the order of 65, 43
and 30.  In this case it is possible for the user *m* who
is the document registrant to recognize that a user "d"
who is in charge of clients of the same industry type
5   and the user "b" who is expected to handle clients of a
different industry type have already registered their
proposal documents much similar in content while also
being permitted to perform communications with them
when the need arises.  Whereby, they are enabled to
10  share know-hows such as a wide variety of client needs
and case-study information or else.

The related information 3120 is the one that
indicates the last updated registration situation of
documents similar in organization information.
15  Displayed as the organization information is a list of
documents of "Belong To" having similar values to the
organization "Finance 1G, ePJ" to which the user *m*
belongs.  In this example the registration document per
se is first displayed with a similarity 70 at the top
20  of the list; next, a document list is displayed in such
a manner that similarities are in the order of 70, 62
and 40.  This makes it possible for the user *m* who is
the document registrant to grasp the up-to-date
registration situation of a user "f" in the same group
25  and also that of a user "g" in the same project, which
in turn enables them to share business in-progress
information and know-hows.

An explanation will next be given of a

detailed procedure of document registration processing
of the document registration program 110 of the
illustrative embodiment, with reference to a flowchart
of Fig. 7.

5          At step 2000 of Fig. 7, acquire a file of the
user's designated document for registration along with
its properties.

          At step 2010, register the registration
document file and its properties to the document
10   storage unit 410 of the document database 40; then,
obtain a document ID.

          At step 2020, extract text data from a
content of the registration document file; then, create
more than one search index; next, store it in the
15   search data storage unit 420 of document database 40.

          At step 2030, call the registration
management information referencing program 120 to
obtain definition information of the to-be-searched
object's properties while referring to the registration
20   management information storage unit 430.

          At step 2040 prepare a search structure index
from the property value(s) of the registration document
and then store it in the search data storage unit 420
of the document database 40.

25          At step 2050 create one or more species or
"seed" documents for use during search for any
available related information of the document being
registered.

At step 2060 call the similar document search program 130 for execution of a similar document search with the seed documents as search conditions.

At step 2070 determine whether the similar
5 document search has been executed relative to all the seed documents involved. If YES at step 2070 then the system procedure goes to step 2080. If NO at step 2070 then return to step 2060.

At step 2080, call the document display
10 program 140 which makes use of both the similarity obtained as a result of the similar document search session and the resultant list of similar documents to prepare related information for visual on-screen display purposes.

15 Upon completion of the user's document registration in the way stated above, a list of specific documents is visually displayed as the related information required, which documents are similar to the registration document in content and in
20 bibliographic information and also in organization information. Whereby it becomes possible for the user to grasp related information beneficial to himself or herself through publication of information without suffering from any troublesome and time-consuming
25 works, which in turn provides motivation of positive and "aggressive" participation in information-sharing/knowledge-sharing.

In addition, when the user performs document

registration in the way discussed above, related

information as to the content of such document is

visually displayed.   Thus it is possible for the user

to become aware of the presence of business, personnel

5   or organization having similar purposes and a tackle

situation in a view point of the similarity of document

content through the user's document publication, which

in turn makes it possible for the user to grasp any

available related or relevant information that is

10   useful to himself or herself.

In addition, when the user performs document

registration in the way stated above, related

information as to the bibliographic information of such

document is visually displayed.   Thus it is possible

15   for the user to become aware of the presence of a

business or personnel in similar fields or categories

and a tackle situation in a view point of the

similarity of document bibliographic information

through the user's document publication, which in turn

20   makes it possible for the user to grasp any available

related or relevant information useful to himself or

herself.

Additionally, when the user performs document

registration in the way noted above, related

25   information as to the organization information is

visually displayed.   Thus it is possible for the user

to become aware of the document registration situation

and/or in-progress status or else of the people who

takes part of the same business in a viewpoint of the
similarity of the registrant's organization information
through the user's document publication, which in turn
makes it possible for the user to grasp any available
5  relevant information useful to himself or herself.

Optionally it may also be possible to select
for display certain documents high in similarity from
among the related information items of the registration
document.  This makes it possible for the user to
10  efficiently grasp his or her useful relevant
information.

With the procedure discussed above, it is
possible to accelerate plus (facilitation) factors on
the document provider side, thereby enabling
15  establishment of motivation of positive participation
in information-sharing/knowledge-sharing.  In other
words, it is possible to give positive incentive to
information providers in accordance with provision
information rather than realization of mere information
20  sharing, thus enabling facilitation and activation of
information sharing.  The above is the explanation of
the first embodiment of the present invention.

Second Embodiment

An explanation will be given of an event for
25  document registration with a folder designated, as a
second embodiment of the present invention, with
reference to some of the attached drawings.

Firstly, an example of a folder configuration for document registration is shown in Fig. 8. The folder structure of Fig. 8 is based on a viewpoint of industry types, wherein a folder with a first

5 hierarchical level is for "Industry Type" whereas second hierarchical folders are "Common", "Finance" and "Insurance". One example is that in a case the user designates a "Banks" folder 3200 of Fig. 8 as a registration destination of a document M, a

10 registration result view such as shown in Fig. 9 is to be displayed.

Fig. 9 is an exemplary document registration result view in the case of document registration while designating a folder.

15 On the document registration result view of Fig. 9, folder information 3300 is displayed in addition to the display contents of the document registration result view of Fig. 6. In the folder information 3300, there are explained that folder icons

20 with star marks added thereto are indicative of the folders with a document M "DB Proposal" registered to each of them, that is, "Industry Type/Finance/Banks", whereas folder icons with no star marks added thereto are for indication of the remaining folders.

25 In the document registration result view of Fig. 9, it displays, in units of documents of related information, whether such a document has been registered to the same folder of a to-be-registered or

"registration" document M.  In the case of registration
to the same folder as the registration document M,
display a folder icon 3310; alternatively if
registration is made to a different folder then display
5  a folder icon 3320.

For example, it is understandable that a
document "Unity System" of a document ID 67 is
presently registered to the same folder as the
registration document M.  On the other hand, a document
10  "Next-Term DB Proposal" of document ID 23 is registered
to a different folder from that of the registration
document M, e.g. a "Life Insurance" folder 3210 of
Fig. 8, so a folder icon 3320 is being displayed.

An explanation will next be given of a
15  detailed procedure of document registration processing
of the document registration program 110 of this
embodiment by use of a flowchart of Fig. 10 below.

Main part of the processing flow covering
from step 2000 to step 2070 is the same as the
20  flowchart of Fig. 7; thus, an explanation thereof is
eliminated herein for brevity purposes only.

At step 2100, call the document display
program 140 for acquisition of folder information of a
storage destination of each document based on the
25  similarity and list of similar document(s) as have been
obtained as a result of a similar document search;
then, prepare related information thereof, which will
then be visually displayed.

The above is the explanation of the practical procedure of the document registration processing of the document registration program 110 of this embodiment.

5          An explanation will next be given of the user's operations with respect to folder icons.  Upon clicking of a folder icon 3310 or 3320 of Fig. 9, it is possible to refer to any documents being presently registered to such folder.

10          For instance, in the event that the user clocks the folder icon 3310 of Fig. 9, a list of those documents residing within the registration destination folder "Industry Type/Fiance/Banks" is to be displayed on the document registration result view of Fig. 11.

15 In such a case, each document is displayed together with its own similarity of content relative to a document being registered.  Alternatively when clocking the folder icon 3320 of Fig. 9, a list of documents within another folder "Industry Type/Insurance/Life" is

20 displayed in the document registration result view of Fig. 12.  In this case also, each document is displayed in association with its own similarity of content relative to the document being registered.

          Whenever the user designates his or her

25 preferred registration destination folder upon registering of a document, notification is made of any available related information of more than one similar document within the registration destination folder.

Whereby, it becomes possible for the user to grasp any
beneficial relevant information within the registration
designation folder through the user's information
publication, which in turn permits establishment of

5   motivation of positive participation in information/
knowledge sharing. In addition, as it becomes possible
to judge whether such folder is appropriate for use as
a destination of registration, which in turn gives a
sense of security to the document provider side

10   resulting in removal of any possible minus
(obstruction) factors as to information sharing; thus,
the information sharing may further be activated.

        In addition, whenever the user designates a
registration destination folder upon his or her

15   registration of a document, there is also notified the
related or relevant information of any available
similar documents residing within folders other than
the registration destination folder. Whereby it
becomes possible to grasp relevant information with

20   respect also to those folders other than the aimed or
"target" folder, which in turn makes it possible for
the user to obtain useful business information while
referring to the documents that have been registered in
a wide variety of viewpoints. Additionally in a case

25   the user judges that a folder other than the target
folder is deemed to be more appropriate for use as the
registration destination, s/he is enabled to take a
proper action such as changing the registration

destination or other similar suitable actions, which in turn gives a sense of security to the document provider side resulting in removal of any possible minus (obstruction) factors as to information sharing; thus,

5 the information sharing may further be activated.  The above is the explanation of the second embodiment of the invention.

Third Embodiment

An explanation will be given of a case of
10 registration of a document while letting it be associated with a plurality of folders, as a third embodiment of the present invention, in conjunction with some of the accompanying drawings.  First see Fig. 13, which shows an exemplary folder structure for
15 document registration.  The folder structure of Fig. 13 is based on three different viewpoints: industry types, products, and clients.  For example, it is possible for the computer user to designate as his or her preferred destination for registration of a document M a "Banks"
20 folder 3200, a "DB" folder 3400 and an "M Bank" folder 3410 of Fig. 13.  In such case, a document registration result view such as shown in Fig. 14 is to be displayed as a result of the registration.  Fig. 14 is an example of the document registration result view in a case a
25 document was registered while designating a plurality of folders.

In the document registration result view of

Fig. 14, it is possible to change or switch between display patterns of resultant related information in a viewpoint of the folder structure. In the case of switching between related information displays, click a

5   list box 3500 of a registration destination folder shown in Fig. 14. Upon clicking of the list box 3500, a list of registration destination folders is displayed as a menu. One example is that in the case of a registration document M, "Industry Type/Finance/Banks"

10  and "Products/DB" plus "Clients/M Bank" are displayed in the form of a menu, which permits the user to choose his or her desired folder from among them. As a result, a folder icon 3510 pursuant to the folder switching is displayed.

15      Accordingly, even in the case of document registration with a plurality of folders designated at a time, it is possible for the user to grasp not only the related information residing within the registration destination folders but also the related

20  information within other folders, and thus becomes possible to obtain any available useful business information while referring to documents as registered in a variety of aspects. To be brief, it is possible for the user to grasp any beneficial relevant

25  information through document publication and registration, which in turn makes it possible to accomplish motivation of positive or aggressive participation in information-sharing/knowledge-sharing

to thereby enable successful activation of information/ knowledge sharing with increased efficiencies.  What is stated above is the explanation of the third embodiment of the invention as disclosed and claimed herein.

5          From the foregoing, it becomes possible for the user to grasp related information beneficial to himself or herself by way of the information publication.

          It should be further understood by those
10   skilled in the art that the foregoing description has been made on embodiments of the invention and that various changes and modifications may be made in the invention without departing from the spirit of the invention and the scope of the appended claims.